and truncating the analysis. **RESULTS:** The survival outcomes produced by the model are presented graphically to illustrate the impact of the different methods, along with the magnitude of change in the incremental benefits and the resulting incremental cost-effectiveness ratios (ICERs) using the various methods compared to the standard approach. Conclusion: Capturing and quantifying the structural uncertainty in partitioned survival analysis is not well developed in the literature. This study demonstrates the considerable uncertainty and the potential for bias from choosing one method of extrapolating outcomes for an economic evaluation using a partitioned survival analysis. The study also proposes options for exploring the uncertainty in order to present a balanced analysis and avoid bias in economic evaluations for oncology research.

PRM145

THE CHALLENGES OF PILOT TESTING TRANSLATED PRO MEASURES WITH CHILDREN

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INTRODUCTION: PRO measures aimed at child respondents are generally developed with the input of children from the target population, although in certain cases their age or medical condition can have implications that make this less feasible. This extends also to the translation and linguistic validation of these measures, where the usual standard of pilot testing translations with the target population may not be appropriate or beneficial. This presentation investigates the challenges of pilot testing translations with children, and explores alternative validation methods. **BACKGROUND:** Current guidelines advise that translated PRO measures should be tested with patients from the target population to best assess the measures' suitability. From our own findings, pilot testing with children can be very successful as they give more creative answers during cognitive interviews, and they can be more willing to give open, honest answers than adults. However, the success of pilot testing with children can vary depending on their age. Younger children may have too limited a vocabulary to express concepts in their own words, or may struggle to understand the cognitive debriefing process. Additionally, in some circumstances there may be ethical issues involved when asking ill children to decide whether to participate in this process which may be difficult for them to understand. **ALTERNATIVES:** Alternative methods must aim to establish the same information that would be obtained from the target population: i.e., whether the translation is appropriate for that group. Therefore we propose review processes involving parents, teachers, paediatric nurses or clinicians, depending on the measure's content and target age range. **CONCLUSION:** In some cases it is possible to successfully pilot test translated PRO measures with children, and it can be the optimum solution, where practical. However, reviews by parents or suitably qualified professionals are useful alternatives where testing with children might not be feasible.

PRM146

QUANTIFYING THE IMPACT OF PROGRESSION ON SURVIVAL IN ONCOLOGY: AN APPLICATION OF STATISTICAL MODELING FRAMEWORK TO MEASURE THE IMPACT OF EVENTS ON SUBSEQUENT RISKS

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In many diseases, the occurrence of a clinical event (e.g., stroke) can change the risk of other, usually more serious, events (e.g., death). Quantifying the impact of the first event and factoring this into assessment or extrapolation of the risk of the second event is important for clinical understanding of the disease as well as health economic assessments of new treatments. For instance, in oncology, understanding the impact of progression of disease on the risk of dying can be vital for projection of overall survival, which is often only partially observed in trials. Proper understanding of the impact of the event requires consideration of not only the occurrence of the event, but also its timing and the possibility that its effect changes with time following the event. For instance, patients who progress early after initiation of treatment may be subject to a greater increase in risk of death than a patient who progresses, say, a year after treatment. Similarly, once progressed, the increase in mortality may be highest soon after the event and gradually decline among surviving patients. We will outline a statistical modeling framework designed to quantify these various dimensions of the impact of events using Cox regression models with time-dependent covariates and effects (i.e., coefficients) to reflect the timing of event (TE) as well as time elapsed since the event (TSE). The model produces estimates that have direct clinical relevance; for instance, the coefficient for TE provides an assessment of the benefit of delaying progression, while TSE reflects whether and for how long the increase in mortality is sustained and whether it ever returns to the level of patients who had not progressed. The parameterization of the model will be illustrated with example code and analyses of example data.

PRM147

AUTOMATIC CREATION OF DISEASE MODELS USING DATA MINING TECHNIQUES ON DATA FROM A CLINICAL CANCER REGISTRY

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OBJECTIVES: Health economic disease models are often build with data from clinical trials and thus do not necessarily reflect the routine care situation in hospitals. For this scenario, we outline a method to generate disease models using data mining algorithms on patient records from a regional clinical cancer registry. **METHODS:** Markov models are a common technique in decision making. Their structure of states and transitions reflects the progress of a disease. We define a disease state as a set of features which represents a specific state of illness, e.g., diagnosis of breast cancer in HER-2-positive (human epidermal growth factor receptor 2) women who are treated with chemotherapy and mastectomy. In particular, a feature can consist of several attributes, e.g., HER-2 status can be described with the attributes 0, 1+, 2+, 3+. States: A feature selection is executed by a modeler who decides which set of features describes a disease state or patient cohort best. For identifying the most relevant attribute combinations a cluster analysis is applied beforehand. Transitions: Patients remain in one particular state as long as they match the predetermined features and attributes. Otherwise, a change to another state occurs. Thereby, a sequence of states for each patient is defined. As a final step, these sequences are used for deriving a model structure. **EXPECTED RESULTS:** Markov models backed up by real-life patient records. As a result of the automatic generation process models can be used for validating hypotheses or comparing outcomes for different patient cohorts. Therefore, the usage of such models is not strictly limited to health economic analysis. A first validation indicates the feasibility of the outlined methods. It was possible to reconstruct a published disease model. **CONCLUSIONS:** Ongoing research is conducted with focus on data quality, i.e., accuracy, completeness and timeliness, at the regional cancer registry.

PRM148

CONTINUOUS PATIENT ENGAGEMENT IN COMPARATIVE EFFECTIVENESS RESEARCH (CER): AN APPLICATION IN CARDIOVASCULAR DISEASE (CVD)

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OBJECTIVES: A 10-step, systematic framework to enhance patient engagement throughout the CER process has been previously proposed. The objective of this research was to apply this framework in the context of CVD since CVD is the leading cause of death in the United States and impacts a diverse patient population. **METHODS:** At each of the 10 steps in the research process, the rationale and means for researchers to engage CVD patients is presented. **RESULTS:** When prioritizing CER topics, patients can inform whether resources should be allocated towards hypertension, a highly prevalent disease with various established therapeutic options, or into finding new treatment options for patients affected by pulmonary arterial hypertension, a rare disease. Patients with CVD can also help to select outcomes that are meaningful from their perspective. Interest in the major outcomes (stroke, heart failure) will likely be balanced against patient concerns with treatment side effects, such as dizziness and dry cough, which can impact quality of life. In the latter steps of translation and dissemination, patients can help to tailor results under primary, secondary, or tertiary prevention and across racial/ethnic subgroups. **CONCLUSIONS:** The 10-step framework can be tailored to engage patients with CVD. For some stages of CER, purposes and strategies for patient engagement for CVD are similar to many other disease states. However, there are unique best practices for patient engagement in CVD. Researchers should recognize that there is no "one-size-fits-all" approach to patient engagement and should engage CVD patients throughout the CER continuum.

PRM150

VALUE OF RARE DISEASE NON-INTERVENTIONAL STUDIES TO SUPPORT PAYER & CLINICAL DESCISION MAKING

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OBJECTIVES: In rare diseases and sub-populations for specialty diseases, national and regional payer negotiations regarding funding and reimbursement of new drugs can be challenging due to the lack of available robust data to inform decision making. Clinical trials designed to ensure regulatory approval often lack the necessary information to meet the needs of a diverse range of payer and clinical stakeholders across the globe. Traditional patient registries, if available, generally do not capture the required level of detail, especially in terms of health-economic data. To ensure ongoing access, new therapies to treat rare diseases require further real world evidence to build a strong clinical and economic case for long term treatment provision. **METHOD:** We employed a variety of traditional and innovative methods to collect real-world evidence on disparate populations of patients with rare diseases. Retrospective chart review studies have been conducted to understand demographics, clinical and pathological characteristics, treatment, outcomes and resource use. Patient and caregiver surveys have subsequently been used to correlate quality of life, functional status and economic burden to patient treatment pathways. **RESULTS:** Non-interventional studies provided a longitudinal understanding of patient care pathway from diagnosis to long-term treatment and follow-up including the natural history of a rare disease, genotypic/phenotypic variability, differences in treatment patterns across countries and the clinical drivers of therapy use. This enabled comparison of real-world treatment practice versus clinical guidelines. In addition, direct and indirect costs were calculated to understand the budget impact of treatment. Insights helped the manufacturer refine the product value proposition and provide necessary evidence to support product access and reimbursement. **CONCLUSIONS:** Rare disease non-interventional studies offer manufacturers the opportunity to fulfill peri and post-launch evidence needs of regulators and payers by providing bespoke and robust real world data efficiently.

PRM151

PUBLICATION OF METHODOLOGICAL GUIDELINES: THE DEVELOPMENT OF SYSTEMATIC REVIEWS (SR) AND META-ANALYSES OF RANDOMIZED CLINICAL TRIALS BY THE DEPARTMENT OF SCIENCE AND TECHNOLOGY OF THE BRAZILIAN MINISTRY OF HEALTH (DECIT/MOH)

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Since 2004, DECIT supports the production of SR by teaching and research institutions in Brazil. However, these studies were guided by international recommendations causing some variability in the execution and presentation of results. In order to standardize and equalize the elaboration quality of SRs throughout Brazil, DECIT requested to research institute Hospital do Coração Hcor draft this guideline. The initiative was funded by the Support Program for the Institutional Development of the Brazilian Public Health System. The guideline was based on two international